REMARKS

Applicant has amended the claims to address the various technical objections of the Examiner and the 35 U.S.C. 112 rejections referred to in paragraphs 2-4.

Claim Rejection Under 35 USC 103(a):

Claims 1 and 10 are rejected under 35 U.S.C. 103(a) as unpatentable over Ayanoglu et al. in view of Ofek. In column 11, lines 53-55 Ayanoglu defines "in-band" as signaling using the VPI/VCI field of an ATM cell that uses the same VCI as the user information or client payload (see column 8, lines 58-65), and using a special PT field value to identify signaling as opposed to client payload. "Out-of-band use the standard signaling VCI on all VPI's. Thus, what distinguishes "in-band" and "out-of-band" communications in Ayanoglu are binary values of cells that share the same physical media.

Thus, Ayanoglu defines "in-band" differently from the definition expressed as follows by the Examiner: "In-band signals are those signals that can be delivered through the contents of a cell".

In contrast, in the current application, "in-band communication" refers to control information traveling over the same set of wires as the payload and "out-of-band communications" refer to control information traveling over a different set of wires from the payload. There is no commonality in the meaning of the words in Ayanoglu and as employed in the current application.

Ofek is cited as disclosing control information having a plurality of control words and inserting in a data path a control of data signal to identify when the data path contains control information and when it contains data. Unfortunately, Ofek does not disclose how control word(s) are used for packet delineation. Ofek discusses control words in column 13, lines 13-54 but provides no explanation as to how they are implemented apart from mentioning the use of encoding. Applicant discloses how its control words are used in complete detail.

Both Ofek and Ayanoglu et al. are wireless systems. Applicant has amended claims 1 and 11 to refer to a "hard-wired" system. Applicant describes a system in which communication between a link layer device and a physical layer device is in accordance with POS-PHY L4 protocol characterized by physical data and control lines. In other words a system employing POS PHY L4 protocol is one in which the signaling is over hard-wired lines.

Both Applicant's system the communications channel uses multiple wires. Applicant takes advantage of this by using a combination of common wires (in-band) and disparate wires (out-of-band) for data and control. This freedom avoids the cost and complexity of encoding and decoding required in Ayanoglu and Ofek. Taking advantage of the actual physical arrangement to reduce cost and complexity is inventive over Ayanoglu and Ofek.

In the rejection of claims 1 and 10 as well as the rejection of claims 11 and12, the Examiner refers to transmitting in-band and out-of-band control information from one of the first and second layer devices to another. In the present application, first and second layer devices, refer to devices processing different layers in the ISO protocol stack. The first layer being the lowest is the Physical or PHY layer. The second layer sits above the PHY layer and is the Link layer. Thus, communications between the first and second layer device has to do with progressively processing a communications stream by two devices operating in a pipelined fashion. Peer-to-peer communications between two mobiles or between the mobiles and the PBS in Ayanoglu would not be examples for communications between a first and second layer device.

With respect to claim 10, the concept of a single control word being able to signal end-of-packet and start-of-packet is not disclosed by Ayanoglu or Ofek. Such a combination reduces the bandwidth waste on the bus when packets are sent back-to-back, a fact not mentioned in either Ayanoglu or Ofek.

Rejection of Claims 11, 12 under 35 U.S.C. 103(a)

In paragraph 7, claims 11, 12 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Ayanoglu in view of Ofek and Fukui et al. The response to the comments in paragraph 7 of the Official Action are the same as those made in response to paragraph 6. With regard to Fukui, the HDLC frame in Fukui is transmitted over a single serial line. Fukui deals with using a serial pattern (called the HDLC flag) to denote frame boundaries and how to avoid normal data from accidentally emulating the

HDLC flag. After sending some amount of serial data that has the potential of emulating an HDLC flag, a zero bit is inserted into the data stream to disrupt the emerging pattern. The insertion of this zero bit does not in any way affect whether subsequent data is to be treated as payload data or control information. In the present application, there are multiple physical channels and no emulation is possible. Consequently, no mechanism for preventing emulation is necessary.

The meaning of FIFO status in Fukui is completely different from that used in the current application. In Fukui, FIFO status refers to packet boundaries (starts and ends of packets). In the current application, FIFO status refers to the number of bytes in the FIFO. Only the count of bytes is considered. There is no regard as to which packet or packets those bytes belong to and which bytes within the FIFO is the first or last byte of the packet. Thus, in the present application, a mechanism is provided to report the amount of data a FIFO can accept without overflowing and an urgent request for more data to prevent underflowing. In Fukui, boundaries of frames are retrieved from the FIFO. Thus what is retrieved is actually the status (begin/end) of a packet, which is supplied to Circuit 1,000 of Fukui, and not the fill levels of the FIFO itself. A better name for FIFO status in Fukui would be packet or packet-byte status. In the current application, the status of the FIFO itself is reported.

Thus, Fukui does not do zero bit insertion to indicate the start and end of data packets but rather to disrupt the emerging pattern of the data in order to prevent emulation when necessary and not to identify when the data path contains control

information and when it contains data. In addition, Fukui does not transmit FIFO status flow information out-of-band as indicated in the Official Action as only starts and ends of packet boundaries in the FIFO are monitored. Applicant monitors the number of bytes in the FIFO so that the number of bytes a FIFO can accept without overflowing and the amount of data needed to prevent underflowing can be determined. Claim 11 has been amended to refer to the fill level of the FIFO capable of being determined in Applicant's method.

Accordingly, re-consideration of the present application is respectfully solicited.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on February 16, 2007.

Joyce Porter 2-16-07
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